

## Statement of Work

### **60th Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC): Benchmark stock assessments for scup and bluefish**

#### *Statement of Work (SOW) for CIE Panelists (including a description of SARC Chairman's duties)*

## BACKGROUND

The National Marine Fisheries Service's (NMFS) Office of Science and Technology coordinates and manages a contract providing external expertise through the Center for Independent Experts (CIE) to conduct independent peer reviews of NMFS scientific projects. The Statement of Work (SoW) described herein was established by the NMFS Project Contact and Contracting Officer's Representative (COR), and reviewed by CIE for compliance with their policy for providing independent expertise that can provide impartial and independent peer review without conflicts of interest. CIE reviewers are independently selected by the CIE Steering Committee and CIE Coordination Team to conduct the independent peer review of NMFS science in compliance the predetermined Terms of Reference (ToRs) of the peer review. Each CIE reviewer is contracted to deliver an independent peer review report to be approved by the CIE Steering Committee and the report is to be formatted with content requirements as specified in **Annex 1**. This SoW describes the work tasks and deliverables of the CIE reviewer for conducting an independent peer review of the following NMFS project. Further information on the CIE process can be obtained from [www.ciereviews.org](http://www.ciereviews.org).

## SCOPE

**Project Description:** The Northeast Regional Stock Assessment Review Committee (SARC) meeting is a formal, multiple-day meeting of stock assessment experts who serve as a panel to peer-review tabled stock assessments and models. The SARC peer review is the cornerstone of the Northeast Stock Assessment Workshop (SAW) process, which includes assessment development and report preparation (which is done by SAW Working Groups or ASMFC technical committees), assessment peer review (by the SARC), public presentations, and document publication. This review determines whether the scientific assessments are adequate to serve as a basis for developing fishery management advice. Results provide the scientific basis for fisheries within the jurisdiction of NOAA's Greater Atlantic Regional Fisheries Office (GARFO).

The purpose of this meeting will be to provide an external peer review of benchmark stock assessments for **scup** and **bluefish**.

## OBJECTIVES

The SARC review panel will be composed of three appointed reviewers from the Center of Independent Experts (CIE), and an independent chair from the SSC of the New England or Mid-Atlantic Fishery Management Council. The SARC panel will write the SARC Summary Report and each CIE reviewer will write an individual independent review report.

Duties of reviewers are explained below in the “**Requirements for CIE Reviewers**”, in the “**Charge to the SARC Panel**” and in the “**Statement of Tasks**”. The draft stock assessment Terms of Reference (ToRs) which are carried out by the SAW WGs are attached in **Annex 2**. The draft agenda of the panel review meeting is attached in **Annex 3**. The SARC Summary Report format is described in **Annex 4**.

**Requirements for the reviewers:** Three reviewers shall conduct an impartial and independent peer review of the **scup** and **bluefish** stock assessments, and this review should be in accordance with this SoW and stock assessment ToRs herein. The reviewers shall have working knowledge and recent experience in the application of modern fishery stock assessment models. Expertise should include statistical catch-at-age, state-space and index models. Reviewers should also have experience in evaluating measures of model fit, identification, uncertainty, and forecasting. Reviewers should have experience in development of Biological Reference Points that includes an appreciation for the varying quality and quantity of data available to support estimation of Biological Reference Points. SARC 60 will address fishery stock assessments of **scup** and **bluefish**. For both species, experience in assessing pelagic stocks and in incorporating environmental factors into assessments would be desirable. For bluefish, experience in the use of recreational fisheries data would also be desirable.

## PERIOD OF PERFORMANCE

The contractor shall complete the tasks and deliverables as specified in the schedule of milestones within this statement of work. Each reviewer’s duties shall not exceed a maximum of 16 days to complete all work tasks of the peer review described herein.

Not covered by the CIE, the SARC chair’s duties should not exceed a maximum of 16 days (i.e., several days prior to the meeting for document review; the SARC meeting in Woods Hole; several days following the open meeting for SARC Summary Report preparation).

## PLACE OF PERFORMANCE AND TRAVEL

Each reviewer shall conduct an independent peer review during the panel review meeting scheduled in Woods Hole, Massachusetts during June 2-5, 2015.

## STATEMENT OF TASKS

**Charge to SARC panel:** During the SARC meeting, the panel is to determine and write down whether each stock assessment Term of Reference (ToR) of the SAW (see **Annex 2**) was or was not completed successfully. To make this determination, panelists should consider whether the work provides a scientifically credible basis for developing fishery management advice. Criteria to consider include: whether the data were adequate and used properly, the analyses and models were carried out correctly, and the conclusions are correct/reasonable. **If alternative assessment models and model assumptions are presented, evaluate their strengths and weaknesses and then recommend which, if any, scientific approach should be adopted.** Where possible, the SARC chair shall identify or facilitate agreement among the reviewers for each stock assessment Term of Reference of the SAW.

If the panel rejects any of the current BRP or BRP proxies (for  $B_{MSY}$  and  $F_{MSY}$  and  $MSY$ ), the panel should explain why those particular BRPs or proxies are not suitable, and the panel should recommend suitable alternatives. If such alternatives cannot be identified, then the panel should indicate that the existing BRPs or BRP proxies are the best available at this time.

Each reviewer shall complete the following tasks in accordance with the SoW and Schedule of Milestones and Deliverables herein.

**Tasks prior to the meeting:** The contractor shall independently select qualified reviewers that do not have conflicts of interest to conduct an independent scientific peer review of stock assessments prepared by SAW WGs or ASMFC Technical Committees in accordance with the tasks and ToRs within the SoW. Upon completion of the independent reviewer selection by the contractor's technical team, the contractor shall provide the reviewer information (full name, title, affiliation, country, address, email, FAX number, and CV suitable for public distribution) to the COR, who will forward this information to the NMFS Project Contact no later than the date specified in the Schedule of Milestones and Deliverables. The contractor shall be responsible for providing the SoW and stock assessment ToRs to each reviewer. The NMFS Project Contact will be responsible for providing the reviewers with the background documents, reports for review, foreign national security clearance, and other information concerning pertinent meeting arrangements. The NMFS Project Contact will also be responsible for providing the Chair a copy of the SoW in advance of the panel review meeting. Any changes to the SoW or ToRs must be made through the COR prior to the commencement of the peer review.

Foreign National Security Clearance: The reviewers shall participate during a panel review meeting at a government facility, and the NMFS Project Contact will be responsible for obtaining the Foreign National Security Clearance approval for the reviewers who are non-US citizens. For this reason, the reviewers shall provide by FAX or by email the following requested information (e.g., 1.name [first, middle, and last], 2.contact information, 3.gender, 4.country of birth, 5.country of citizenship, 6.country of permanent residence, 7.whether there is dual citizenship, 8.country of current residence, 9.birth date [mo, day, year], 10.passport number, 11.country of passport) to the NMFS Project Contact for the purpose of their security clearance, and this information shall be submitted at least 30 days before the peer review in accordance with the NOAA Deemed Export Technology Control Program NAO 207-12 regulations available at the Deemed Exports NAO website: <http://deemedexports.noaa.gov/>.

Pre-review Background Documents and Working Papers: Approximately two weeks before the peer review, the NMFS Project Contact will send (by electronic mail or make available at an FTP site) to the SARC chair and CIE reviewers the necessary background information and reports (i.e., working papers) for the peer review. In the case where the documents need to be mailed, the NMFS Project Contact will consult with the COR on where to send documents. The reviewers are responsible only for the pre-review documents that are delivered to the contractor in accordance to the SoW scheduled deadlines specified herein. The reviewers shall read all documents deemed as necessary in preparation for the peer review.

**Tasks during the panel review meeting:** Each reviewer shall conduct the independent peer review of the stock assessments in accordance with the SoW and stock assessment ToRs, and shall not serve in any other role unless specified herein. **Modifications to the SoW and ToRs shall not be made during the peer review, and any SoW or ToRs modifications prior to the peer review shall be approved by the COR and contractor.** Each CIE reviewer shall actively participate in a professional and respectful manner as a member of the meeting review panel, and their peer review tasks shall be focused on the stock assessment ToRs as specified herein. The NMFS Project Contact is responsible for any facility arrangements (e.g., conference room for panel review meetings or teleconference arrangements). The NMFS Project Contact is responsible for ensuring that the Chair understands the contractual role of the CIE reviewers as specified herein. The CIE Lead Coordinator can contact the Project Contact to confirm any peer review arrangements, including the meeting facility arrangements.

(SARC chair)

Act as chairperson, where duties include control of the meeting, coordination of presentations and discussions, making sure all stock assessment Terms of Reference of the SAW are reviewed, control of document flow, and facilitation of discussion. For each assessment, review both the Assessment Report and the draft Assessment Summary Report. The draft Assessment Summary Report is reviewed and edited to assure that it is consistent with the outcome of the peer review, particularly statements that address stock status and assessment uncertainty.

During the question and answer periods, provide appropriate feedback to the assessment scientists on the sufficiency of their analyses. It is permissible to discuss the stock assessment and to request additional information if it is needed to clarify or correct an existing analysis and if the information can be produced rather quickly.

(SARC CIE reviewers)

For each stock assessment, participate as a peer reviewer in panel discussions on assessment validity, results, recommendations, and conclusions. From a reviewer's point of view, determine whether each stock assessment Term of Reference of the SAW was completed successfully. Terms of Reference that are completed successfully are likely to serve as a basis for providing scientific advice to management. If a reviewer considers any existing Biological Reference Point or BRP proxy to be inappropriate, the reviewer should try to recommend an alternative, should one exist. Review both the Assessment Report and the draft Assessment Summary Report. The draft Assessment Summary

Report is reviewed and edited to assure that it is consistent with the outcome of the peer review, particularly statements that address stock status and assessment uncertainty.

During the question and answer periods, provide appropriate feedback to the assessment scientists on the sufficiency of their analyses. It is permissible to request additional information if it is needed to clarify or correct an existing analysis and if the information can be produced rather quickly.

### **Tasks after the panel review meeting:**

#### SARC CIE reviewers:

Each CIE reviewer shall prepare an Independent CIE Report (see **Annex 1**). This report should explain whether each stock assessment Term of Reference of the SAW was or was not completed successfully during the SARC meeting, using the criteria specified above in the “Charge to SARC panel” statement.

If any existing Biological Reference Points (BRP) or their proxies are considered inappropriate, the Independent CIE Report should include recommendations and justification for suitable alternatives. If such alternatives cannot be identified, then the report should indicate that the existing BRPs are the best available at this time.

During the meeting, additional questions that were not in the Terms of Reference but that are directly related to the assessments may be raised. Comments on these questions should be included in a separate section at the end of the Independent CIE Report produced by each reviewer.

The Independent CIE Report can also be used to provide greater detail than the SARC Summary Report on specific stock assessment Terms of Reference or on additional questions raised during the meeting.

#### SARC chair:

The SARC chair shall prepare a document summarizing the background of the work to be conducted as part of the SARC process and summarizing whether the process was adequate to complete the stock assessment Terms of Reference of the SAW. If appropriate, the chair will include suggestions on how to improve the process. This document will constitute the introduction to the SARC Summary Report (see **Annex 4**).

#### SARC chair and CIE reviewers:

The SARC Chair, with the assistance from the CIE reviewers, will prepare the SARC Summary Report. Each CIE reviewer and the chair will discuss whether they hold similar views on each stock assessment Term of Reference and whether their opinions can be summarized into a single conclusion for all or only for some of the Terms of Reference of the SAW. For terms where a similar view can be reached, the SARC Summary Report will contain a summary of such opinions. In cases where multiple and/or differing views exist on a given Term of Reference, the SARC Summary Report

will note that there is no agreement and will specify - in a summary manner – what the different opinions are and the reason(s) for the difference in opinions.

The chair's objective during this SARC Summary Report development process will be to identify or facilitate the finding of an agreement rather than forcing the panel to reach an agreement. The chair will take the lead in editing and completing this report. The chair may express the chair's opinion on each Term of Reference of the SAW, either as part of the group opinion, or as a separate minority opinion.

The SARC Summary Report (please see **Annex 4** for information on contents) should address whether each stock assessment Term of Reference of the SAW was completed successfully. For each Term of Reference, this report should state why that Term of Reference was or was not completed successfully. The Report should also include recommendations that might improve future assessments.

If any existing Biological Reference Points (BRP) or BRP proxies are considered inappropriate, the SARC Summary Report should include recommendations and justification for suitable alternatives. If such alternatives cannot be identified, then the report should indicate that the existing BRP proxies are the best available at this time.

The contents of the draft SARC Summary Report will be approved by the CIE reviewers by the end of the SARC Summary Report development process. The SARC chair will complete all final editorial and formatting changes prior to approval of the contents of the draft SARC Summary Report by the CIE reviewers. The SARC chair will then submit the approved SARC Summary Report to the NEFSC contact (i.e., SAW Chairman).

## **DELIVERY**

Each reviewer shall complete an independent peer review report in accordance with the SoW. Each reviewer shall complete the independent peer review according to required format and content as described in **Annex 1**. Each reviewer shall complete the independent peer review addressing each stock assessment ToR listed in **Annex 2**.

**Specific Tasks for CIE Reviewers:** The following chronological list of tasks shall be completed by each CIE reviewer in a timely manner as specified in the **Schedule of Milestones and Deliverables**.

- 1) Conduct necessary pre-review preparations, including the review of background material and reports provided by the NMFS Project Contact in advance of the peer review.
- 2) Participate during the panel review meeting at the Woods Hole, Massachusetts scheduled during the tentative dates of June 2-5, 2015.
- 3) Conduct an independent peer review in accordance with this SoW and the assessment ToRs (listed in **Annex 2**).
- 4) No later than June 19, 2015, each CIE reviewer shall submit an independent peer review report addressed to the "Center for Independent Experts," and sent to Dr. Manoj Shrivani, CIE Lead Coordinator, via email to mshrivani@ntvifederal.com, and to Dr. David

Sampson, CIE Regional Coordinator, via email to david.sampson@oregonstate.edu. Each CIE report shall be written using the format and content requirements specified in **Annex 1**, and address each assessment ToR in **Annex 2**.

**Schedule of Milestones and Deliverables:** The contractor shall complete the tasks and deliverables described in this SoW in accordance with the following schedule.

April 24, 2015	Contractor sends reviewer contact information to the COR, who then sends this to the NMFS Project Contact
May 19, 2015	NMFS Project Contact will attempt to provide reviewers the pre-review documents
June 2-5, 2015	Each reviewer participates and conducts an independent peer review during the panel review meeting in Woods Hole, MA
June 5, 2015	SARC Chair and CIE reviewers work at drafting reports during meeting at Woods Hole, MA, USA
June 19, 2015	Reviewers submit draft independent peer review reports to the contractor's technical team for independent review
June 19, 2015	Draft of SARC Summary Report, reviewed by all CIE reviewers, due to the SARC Chair *
June 26, 2015	SARC Chair sends Final SARC Summary Report, approved by CIE reviewers, to NEFSC contact (i.e., SAW Chairman)
July 2, 2015	Contractor submits independent peer review reports to the COR who reviews for compliance with the contract requirements
July 10, 2015	The COR distributes the final reports to the NMFS Project Contact and regional Center Director

\* The SARC Summary Report will not be submitted, reviewed, or approved by the CIE.

The SAW Chairman will assist the SARC chair prior to, during, and after the meeting in ensuring that documents are distributed in a timely fashion.

NEFSC staff and the SAW Chairman will make the final SARC Summary Report available to the public. Staff and the SAW Chairman will also be responsible for production and publication of the collective Working Group papers, which will serve as a SAW Assessment Report.

**Modifications to the Statement of Work:** Requests to modify this SoW must be approved by the Contracting Officer at least 15 working days prior to making any permanent substitutions. The Contracting Officer will notify the COR within 10 working days after receipt of all required information of the decision on substitutions. The COR can approve changes to the milestone dates, list of pre-review documents, and ToRs within the SoW as long as the role and ability of the reviewers to complete the deliverable in accordance with the SoW is not adversely impacted. The SoW and ToRs shall not be changed once the peer review has begun.

**Acceptance of Deliverables:** The deliverables shall be the final peer review report from each reviewer that satisfies the requirements and terms of reference of this SoW. The contract shall be successfully completed upon the acceptance of the contract deliverables by the COR based on three performance standards:

- (1) each report shall be completed with the format and content in accordance with **Annex 1**,
- (2) each report shall address each stock assessment ToR listed in **Annex 2**,
- (3) each report shall be delivered in a timely manner as specified in the schedule of milestones and deliverables.

Upon the acceptance of each independent peer review report by the COR, the reports will be distributed to the NMFS Project Contact and pertinent NMFS science director, at which time the reports will be made publicly available through the government's website.

The contractor shall send the final reports in PDF format to the COR, designated to be Allen Shimada, via email [allen.shimada@noaa.gov](mailto:allen.shimada@noaa.gov)

**Support Personnel:**

Allen Shimada, COR  
NMFS Office of Science and Technology  
1315 East West Hwy, SSMC3, F/ST4, Silver Spring, MD 20910  
[allen.shimada@noaa.gov](mailto:allen.shimada@noaa.gov) Phone: 301-427-8174

Manoj Shivilani, CIE Lead Coordinator  
NTVI Communications, Inc.  
10600 SW 131<sup>st</sup> Court, Miami, FL 33186  
[mshivilani@ntvifederal.com](mailto:mshivilani@ntvifederal.com) Phone: 305-968-7136

**Key Personnel:**

Dr. James Weinberg, NEFSC SAW Chairman, NMFS Project Contact  
Northeast Fisheries Science Center  
166 Water Street, Woods Hole, MA 02543  
[James.Weinberg@noaa.gov](mailto:James.Weinberg@noaa.gov) (Phone: 508-495-2352) (FAX: 508-495-2230)

Dr. William Karp, NEFSC Science Director  
Northeast Fisheries Science Center  
166 Water St., Woods Hole, MA 02543  
[william.karp@noaa.gov](mailto:william.karp@noaa.gov) Phone: 508-495-2233



## **Annex 1: Format and Contents of Independent Peer Review Report**

1. The independent peer review report shall be prefaced with an Executive Summary providing a concise summary of whether they accept or reject the work that they reviewed, with an explanation of their decision (strengths, weaknesses of the analyses, etc.).
2. The main body of the report shall consist of a Background, Description of the Individual Reviewer's Role in the Review Activities, Findings of whether they accept or reject the work that they reviewed, and an explanation of their decisions (strengths, weaknesses of the analyses, etc.) for each ToR, and Conclusions and Recommendations in accordance with the ToRs. For each assessment reviewed, the report should address whether each ToR of the SAW was completed successfully. For each ToR, the Independent Review Report should state why that ToR was or was not completed successfully. To make this determination, the SARC chair and reviewers should consider whether the work provides a scientifically credible basis for developing fishery management advice.
  - a. Reviewers should describe in their own words the review activities completed during the panel review meeting, including a concise summary of whether they accept or reject the work that they reviewed, and explain their decisions (strengths, weaknesses of the analyses, etc.), conclusions, and recommendations.
  - b. Reviewers should discuss their independent views on each ToR even if these were consistent with those of other panelists, and especially where there were divergent views.
  - c. Reviewers should elaborate on any points raised in the SARC Summary Report that they feel might require further clarification.
  - d. Reviewers shall provide a critique of the NMFS review process, including suggestions for improvements of both process and products.
  - e. The independent report shall be a stand-alone document for others to understand the proceedings and findings of the meeting, regardless of whether or not others read the SARC Summary Report. The independent report shall be an independent peer review of each ToR, and shall not simply repeat the contents of the summary report.
3. The reviewer report shall include the following appendices:
  - Appendix 1: Bibliography of materials provided for review
  - Appendix 2: A copy of this Statement of Work
  - Appendix 3: Panel Membership or other pertinent information from the panel review meeting.

## **Annex 2: 60<sup>th</sup> SAW/SARC Stock Assessment Terms of Reference** (file vers.: 10/162014)

### **A. Scup**

1. Estimate catch from all sources including landings and discards. Include recreational discards, as appropriate. Describe the spatial and temporal distribution of landings, discards, and fishing effort. Characterize the uncertainty in these sources of data.
2. Present the survey data being used in the assessment (e.g., indices of relative or absolute abundance, recruitment, state surveys, age-length data, etc.). Characterize the uncertainty and any bias in these sources of data.
3. Describe the thermal habitat and its influence on the distribution and abundance of scup, and attempt to integrate the results into the stock assessment.
4. Estimate annual fishing mortality, recruitment and stock biomass (both total and spawning stock) for the time series, and estimate their uncertainty. Include a historical retrospective analysis to allow a comparison with previous assessment results and previous projections.
5. State the existing stock status definitions for “overfished” and “overfishing”. Then update or redefine biological reference points (BRPs; point estimates or proxies for  $B_{MSY}$ ,  $B_{THRESHOLD}$ ,  $F_{MSY}$  and  $MSY$ ) and provide estimates of their uncertainty. If analytic model-based estimates are unavailable, consider recommending alternative measurable proxies for BRPs. Comment on the scientific adequacy of existing BRPs and the “new” (i.e., updated, redefined, or alternative) BRPs.
6. Evaluate stock status with respect to the existing model (from previous peer reviewed accepted assessment) and with respect to a new model developed for this peer review.
  - a. When working with the existing model, update it with new data and evaluate stock status (overfished and overfishing) with respect to the existing BRP estimates.
  - b. Then use the newly proposed model and evaluate stock status with respect to “new” BRPs and their estimates (from TOR-5).
7. Develop approaches and apply them to conduct stock projections and to compute the statistical distribution (e.g., probability density function) of the OFL (overfishing level) (see Appendix to SAW TORs for definitions).
  - a. Provide numerical annual projections (3 years). Each projection should estimate and report annual probabilities of exceeding threshold BRPs for  $F$ , and probabilities of falling below threshold BRPs for biomass. Use a sensitivity analysis approach in which a range of assumptions about the most important uncertainties in the assessment are considered (e.g., terminal year abundance, variability in recruitment).
  - b. Comment on which projections seem most realistic. Consider the major uncertainties in the assessment as well as sensitivity of the projections to various assumptions.
  - c. Describe this stock’s vulnerability (see “Appendix to the SAW TORs”) to becoming overfished, and how this could affect the choice of ABC.
8. Review, evaluate and report on the status of the SARC, SSC, and Working Group research recommendations listed in most recent SARC reviewed assessment and review panel reports. Identify new research recommendations.

## **Annex 2: (cont)**

### **B. Bluefish**

1. Estimate catch from all sources including landings and discards. Evaluate and if necessary update the discard mortality estimate. Describe the spatial and temporal distribution of landings, discards, and fishing effort. Characterize the uncertainty in these sources of data.
2. Present and evaluate data and trends on life history information including, age, growth, natural mortality, food habits, and maturity.
3. Present the survey data available for use in the assessment (e.g., indices of relative or absolute abundance, recruitment, state surveys, age-length data, etc.), evaluate the utility of the age-length key for use in stock assessment, and explore standardization of fishery-independent indices. Investigate the utility of recreational LPUE as a measure of relative abundance. Characterize the uncertainty and any bias in these sources of data, including exploring environmentally driven changes in availability and related changes in size structure. Explore the spatial distribution of the stock over time, and whether there are consistent distributional shifts.
4. Estimate relative fishing mortality, annual fishing mortality, recruitment, total abundance, and stock biomass (both total and spawning stock) for the time series, and estimate their uncertainty. Explore inclusion of multiple fleets in the model. Include both internal and historical retrospective analyses to allow a comparison with previous assessment results and previous projections. Explore alternative modeling approaches if feasible.
5. State the existing stock status definitions for “overfished” and “overfishing”. Then update or redefine biological reference points (BRPs; point estimates or proxies for BMSY, BTHRESHOLD, FMSY and MSY) and provide estimates of their uncertainty. If analytic model-based estimates are unavailable, consider recommending alternative measurable proxies for BRPs. Comment on the scientific adequacy of existing BRPs and the “new” (i.e., updated, redefined, or alternative) BRPs.
6. Evaluate stock status with respect to the existing model (from previous peer review accepted assessment) and with respect to a new model developed for this peer review.
  - a. When working with the existing model, update it with new data and evaluate stock status (overfished and overfishing) with respect to the existing BRP estimates.
  - b. Then use the newly proposed model and evaluate stock status with respect to “new” BRPs and their estimates (from TOR-5).
7. Develop approaches and apply them to conduct stock projections and to compute the statistical distribution (e.g., probability density function) of the OFL (overfishing level; see Appendix to the SAW TORs).
  - a. Provide annual projections (3 years). For given catches, each projection should estimate and report annual probabilities of exceeding threshold BRPs for F, and probabilities of falling below threshold BRPs for biomass. Use a sensitivity analysis approach in which a range of assumptions about the most important uncertainties in the assessment are considered (e.g., terminal year abundance, variability in recruitment).

- b. Comment on which projections seem most realistic. Consider the major uncertainties in the assessment as well as sensitivity of the projections to various assumptions.
  - c. Describe this stock's vulnerability (see "Appendix to the SAW TORs") to becoming overfished, and how this could affect the choice of ABC.
8. Review, evaluate and report on the status of the SARC and Working Group research recommendations listed in most recent SARC reviewed assessment and review panel reports, as well as MAFMC SSC model recommendations from 2005 and the research recommendations contained in its 23 September 2013 report to the MAFMC. Identify new research recommendations.

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## **Annex 2: (cont)**

### *Appendix to the SAW Assessment TORs:* **Clarification of Terms used in the SAW/SARC Terms of Reference**

#### **On "Overfishing Limit" and Acceptable Biological Catch" (DOC Nat. Stand. Guidel. Fed. Reg., v. 74, no. 11, 1-16-2009):**

*Acceptable biological catch (ABC)* is a level of a stock or stock complex's annual catch that accounts for the scientific uncertainty in the estimate of [overfishing limit] OFL and any other scientific uncertainty..." (p. 3208) [In other words,  $OFL \geq ABC$ .]

*ABC for overfished stocks.* For overfished stocks and stock complexes, a rebuilding ABC must be set to reflect annual catch that is consistent with schedule of fishing mortality rates in the rebuilding plan. (p. 3209)

NMFS expects that in most cases ABC will be reduced from OFL to reduce the probability that overfishing might occur in a year. (p. 3180)

ABC refers to a level of "catch" that is "acceptable" given the "biological" characteristics of the stock or stock complex. As such, [optimal yield] OY does not equate with ABC. The specification of OY is required to consider a variety of factors, including social and economic factors, and the protection of marine ecosystems, which are not part of the ABC concept. (p. 3189)

#### **On "Vulnerability" (DOC Natl. Stand. Guidelines. Fed. Reg., v. 74, no. 11, 1-16-2009):**

*"Vulnerability.* A stock's vulnerability is a combination of its productivity, which depends upon its life history characteristics, and its susceptibility to the fishery. Productivity refers to the capacity of the stock to produce MSY and to recover if the population is depleted, and susceptibility is the potential for the stock to be impacted by the fishery, which includes direct captures, as well as indirect impacts to the fishery (e.g., loss of habitat quality)." (p. 3205)

#### **Interactions among members of a SAW Assessment Working Group:**

Anyone participating in SAW assessment working group meetings that will be running or presenting results from an assessment model is expected to supply the source code, a compiled executable, an input file with the proposed configuration, and a detailed model description in advance of the model meeting. Source code for NOAA Toolbox programs is available on request. These measures allow transparency and a fair evaluation of differences that emerge between models.

#### **One model or alternative models:**

The preferred outcome of the SAW/SARC is to identify a single "best" model and an accompanying set of assessment results and a stock status determination. If selection of a "best" model is not possible, present alternative models in detail, and summarize the relative utility each model, including a comparison of results.

### **Annex 3: Draft Agenda**

#### **60th Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC): Benchmark stock assessments for A. scup and B. bluefish**

**June 2-5, 2015**

Stephen H. Clark Conference Room – Northeast Fisheries Science Center  
Woods Hole, Massachusetts

#### **DRAFT AGENDA\* (version: Dec. 1, 2014)**

TOPIC	PRESENTER(S)	SARC LEADER	RAPPORTEUR
<b><u>Tuesday, June 2</u></b>			
<b>10 – 10:30 AM</b>			
Welcome	<b>James Weinberg</b> , SAW Chair		
Introduction	<b>TBD</b> , SARC Chair		
Agenda			
Conduct of Meeting			
<b>10:30 – 12:30 PM</b>	Assessment Presentation (A. Scup) <b>Mark Terceiro</b>	<b>TBD</b>	<b>TBD</b>
<b>12:30 – 1:30 PM</b>	Lunch		
<b>1:30 – 3:30 PM</b>	Assessment Presentation (A. Scup) <b>Mark Terceiro</b>	<b>TBD</b>	<b>TBD</b>
<b>3:30 – 3:45 PM</b>	Break		
<b>3:45 – 5:45 PM</b>	SARC Discussion w/ Presenters (A. Scup) <b>TBD</b> , SARC Chair		<b>TBD</b>
<b>5:45 – 6 PM</b>	Public Comments		

TOPIC	PRESENTER(S)	SARC LEADER	RAPPORTEUR
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### **Wednesday, June 3**

<b>8:30 – 10:30 AM</b>	Assessment Presentation (B. bluefish) <b>Tony Wood</b>	TBD	<b>TBD</b>
<b>10:30 – 10:45 AM</b>	Break		
<b>10:45 – 12:30 PM</b>	(cont.) Assessment Presentation (B. bluefish ) <b>Tony Wood</b>	TBD	<b>TBD</b>
<b>12:30 – 1:30 PM</b>	Lunch		
<b>1:30 – 3:30 PM</b>	SARC Discussion w/presenters (B. bluefish ) <b>TBD, SARC Chair</b>		<b>TBD</b>
<b>3:30 – 3:45 PM</b>	Public Comments		
<b>3:45 -4 PM</b>	Break		
<b>4 – 6 PM</b>	Revisit with presenters (A. Scup ) <b>TBD, SARC Chair</b>		<b>TBD</b>
<b>7 PM</b>	(Social Gathering )		

TOPIC	PRESENTER(S)	SARC LEADER	RAPPORTEUR
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### **Thursday, June 4**

<b>8:30 – 10:30</b>	Revisit with presenters (B. bluefish) <b>TBD, SARC Chair</b>	<b>TBD</b>
<b>10:30 – 10:45</b>	Break	
<b>10:45 – 12:15</b>	Review/edit Assessment Summary Report (A. Scup) <b>TBD, SARC Chair</b>	<b>TBD</b>
<b>12:15 – 1:15 PM</b>	Lunch	
<b>1:15 – 2:45 PM</b>	(cont.) edit Assessment Summary Report (A. Scup ) <b>TBD, SARC Chair</b>	<b>TBD</b>
<b>2:45 – 3 PM</b>	Break	
<b>3 – 6 PM</b>	Review/edit Assessment Summary Report (B. bluefish) <b>TBD, SARC Chair</b>	<b>TBD</b>

### **Friday, June 5**

<b>9:00 AM – 5:00 PM</b>	SARC Report writing.
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\*All times are approximate, and may be changed at the discretion of the SARC chair. The meeting is open to the public. The public should not engage in discussion with the SARC during SARC report writing, which is scheduled for June 5.

**\*The NMFS Project contact will provide the final agenda about four weeks before meeting. Reviewers must attend the entire meeting.**

#### **Annex 4: Contents of SARC Summary Report**

1.

The main body of the report shall consist of an introduction prepared by the SARC chair that will include the background, a review of activities and comments on the appropriateness of the process in reaching the goals of the SARC. Following the introduction, for each assessment reviewed, the report should address whether each Term of Reference of the SAW Working Group was completed successfully. For each Term of Reference, the SARC Summary Report should state why that Term of Reference was or was not completed successfully.

To make this determination, the SARC chair and CIE reviewers should consider whether the work provides a scientifically credible basis for developing fishery management advice. Scientific criteria to consider include: whether the data were adequate and used properly, the analyses and models were carried out correctly, and the conclusions are correct/reasonable. If the CIE reviewers and SARC chair do not reach an agreement on a Term of Reference, the report should explain why. It is permissible to express majority as well as minority opinions.

The report may include recommendations on how to improve future assessments.

2.

If any existing Biological Reference Points (BRP) or BRP proxies are considered inappropriate, include recommendations and justification for alternatives. If such alternatives cannot be identified, then indicate that the existing BRPs or BRP proxies are the best available at this time.

3.

The report shall also include the bibliography of all materials provided during the SAW, and relevant papers cited in the SARC Summary Report, along with a copy of the CIE Statement of Work.

The report shall also include as a separate appendix the assessment Terms of Reference used for the SAW, including any changes to the Terms of Reference or specific topics/issues directly related to the assessments and requiring Panel advice.